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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,955	12/07/2001	Abbas Arian	1391-27000	3449

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EXAMINER
HSIEH, SHIH YUNG

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/007,955	ARIAN ET AL.	
	Examiner	Art Unit	
	Shih-yung Hsieh	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 25 and 26 is/are allowed.

6)☒ Claim(s) 1,4-11,14-16,18 and 20-24 is/are rejected.

7)☒ Claim(s) 2,3,12,13,17 and 19 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. Claims 12 and 13 are objected to because of the following informalities: "said nodal masses" in claim 12 lacks antecedent basis. Appropriate correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 8-9, 11, 15-16, 18, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyle et al. (5,036,945) in view of Blake (3,770,232).

Regarding claim 1, Hoyle et al disclose an apparatus comprising: a transmitter (10a); a receiver (10c); and an acoustic attenuation section (10b) having a housing (C7c) disposed between said transmitter and said receiver except that one or more springs connected in series and disposed in said housing.

Blake teaches one or more springs (56) connected in series (col. 2, lines 15-19) and disposed in a housing (6) for attenuating high intensity shock waves (col. 1, line 9). It would have been obvious to one having ordinary skill in the art to modify Hoyle et al's apparatus as taught by Blake to include one or more springs connected in series and disposed in said housing for the purpose of attenuating high intensity shock waves.

Regarding claims 8-9, 23, Hoyle et al. disclose the claimed invention except that the outer surface of the spring is separated from the inner surface of the adjoining housing by at least 0.010inches and less than 0.100 inches.

Blake teaches the outer surface of the spring is separated from the inner surface of the adjoining housing by at least 0.010inches and less than 0.100 inches (Figure) for allowing the movement of the spring. It would have been obvious to one having ordinary skill in the art to modify Hoyle et al's apparatus as taught by Blake to arrange the outer surface of the spring is separated from the inner surface of the adjoining housing by at least 0.010inches and less than 0.100 inches for the purpose of allowing the movement of the spring.

Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the spacing between the outer surface of the spring and the inner surface of the adjoining housing to be at least 0.010inches and less than 0.100 inches, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 11, Hoyle et al. disclose a rod member (Fig. 5A)

Regarding claim 15, Hoyle et al. disclose said attenuation section being filled with fluid (col. 8, lines 44-46).

Regarding claim 16, Hoyle et al. disclose the claimed invention except that a plurality of springs connected in series to form an elongated body; and a plurality of housings corresponding in number to and disposed about said springs.

Blake teaches a plurality of springs connected in series to form an elongated body; and a plurality of housings corresponding in number to and disposed about said springs (Figure) for attenuating high intensity shock waves. It would have been obvious

to one having ordinary skill in the art to modify Hoyle et al's apparatus as taught by Blake to include a plurality of springs connected in series to form an elongated body; and a plurality of housings corresponding in number to and disposed about said springs for the purpose of attenuating high intensity shock waves.

Regarding claim 18, Hoyle et al. in view of Blake disclose the claimed invention except that a plurality of rod members axially interconnected between two springs. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a plurality of rod members axially interconnected between two springs, since it has been held that mere duplication of he essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis co., 193 USPQ 8.

4. Claims 4, 10, 20-21, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyle et a. in view of Blake as applied to claims 1 and 16 above, and further in view of Shah et al. (6,137,747).

Regarding claims 4, 10, 20-21, and 24, Hoyle et al. in view of Blake disclose the claimed invention except that the spring, the housing, between the rod member and the nodal mass are coated with a layer of resilient material.

Shah et al. teach coating a support sleeve surface of an acoustic transmitter with a layer of resilient material (col. 5, lines 51-55) for preserving free axial movement. It would have been obvious to one having ordinary skill in the art to modify Hoyle et al in view of Blake's apparatus as taught by Shah et al. to include coating the spring, the

housing, between the rod member and the nodal mass with a layer of resilient material for the purpose of preserving free axial movement.

5. Claims 5-6, 14, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyle et al. in view of Blake as applied to claims 1 and 16 above, and further in view of Beresford et al. (6,145,615).

Regarding claims 5-6, 14, and 22, Hoyle et al. in view of Blake disclose the claimed invention except that disclosing the selection of certain spring stiffness to withstand axial load of 100,000 pounds.

Beresford et al. teach a mechanical filter for damping longitudinal wave at a predetermined frequency for a drill string with design information (col. 6, lines 1-3, and lines 10-55). It would have been obvious to one having ordinary skill in the art to modify Hoyle et al in view of Blake's apparatus as taught by Beresford et al. to include certain spring stiffness for the purpose of withstanding certain axial load.

Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select such spring stiffness value, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ215 (CCPA 1980).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyle et al. in view of Blake as applied to claim 1 above, and further in view of Wignall et al. (4,872,526).

Hoyle et al. in view of Blake disclose the claimed invention except that the coils of said springs have radial holes extending therethrough.

Wignall et al. teach coils of said springs (10b1-3 in Fig. 9) have radial holes (D) extending therethrough for low acoustic impedence. It would have been obvious to one having ordinary skill in the art to modify Hoyle et al in view of Blake's apparatus as taught by Wignall et al. to include the coils of said springs have radial holes extending therethrough for the purpose of providing low impedence.

7. Claims 2-3, 12-13, 17, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 25 and 26 are allowed.

9. The claims are allowable over the prior art for at least the reason that the prior art fails to reasonably teach or suggest in claim 2 that a plurality of nodal masses disposed along said attenuation section, in claim 12 that said nodal masses are disposed about said rod members, in claim 17 that a plurality of nodal masses corresponding in number to said springs disposed along the length of the body, in claim 19 that a plurality of masses are positioned about said rod members, in claim 25 that the method step of transmitting acoustic energy through the attenuation section comprising a corresponding number of nodal masses to the corresponding number of housings, and

in claim 26 that a method step of receiving acoustic energy from the first spring with a connecting rod wherein the connecting rod possesses a nodal mass that prevents compression of the spring beyond a predetermined limit as set forth in the claimed combination.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-yung Hsieh whose telephone number is 703-308-1031. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

syh
April 8, 2003

SHIH-YUNG HSIEH
PRIMARY EXAMINER